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SAFETY PRECAUTIONS FOR TEST RANGES

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WEAPONS SYSTEMS DEPARTMENT**

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13. ABSTRACT (Maximum 200 words) This report provides important information relative to the safety precautions for test ranges at the Naval Surface Warfare Center, Dahlgren Site (NSWCDC), Dahlgren, VA. Its purposes are to demonstrate the meaning of barricades, signs and flags displayed during a firing in progress and to ensure awareness and compliance by NSWCDC personnel, contractors and visitors with these warning signals during a firing.				
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FOREWORD

This publication provides important information relative to safety precautions for test ranges at the Naval Surface Warfare Center, Dahlgren Site (NSWC DL), Dahlgren, VA. Its purposes are to demonstrate the meaning of barricades, signs, and flags displayed during a firing in progress and to ensure awareness and compliance by NSWC DL personnel, contractors, and visitors with these warning signals during a firing.

The assistance provided by Charles Peyton and Charles Coghill is gratefully acknowledged.

This document was reviewed by Lawrence Graeber, Head, Potomac River Test Range Branch; Charles Pitts, Test and Evaluation Services Branch; and Charles Coghill, Ordnance Officer/Range Safety Director.

Approved by:

A handwritten signature in cursive script, appearing to read "S. L. Collignon".

S. L. Collignon, Head
Weapons Evaluation Division

INTRODUCTION

One of the functions of the Naval Surface Warfare Center, Dahlgren Site (NSWC DL), Weapons Systems Department, Weapons Evaluation Division is to conduct research and development, test and evaluation of weapon systems, system components, and energetic materials. These operations are considered extremely hazardous. In order to minimize the risk to non-participating personnel, the test areas are closed to through traffic (vehicular and pedestrian) during test operations.

Many of the test facilities are located along Higley Road and Tisdale Road. While these roads offer a scenic drive or perhaps shorter distance, keep in mind that personal safety must be of the utmost importance.

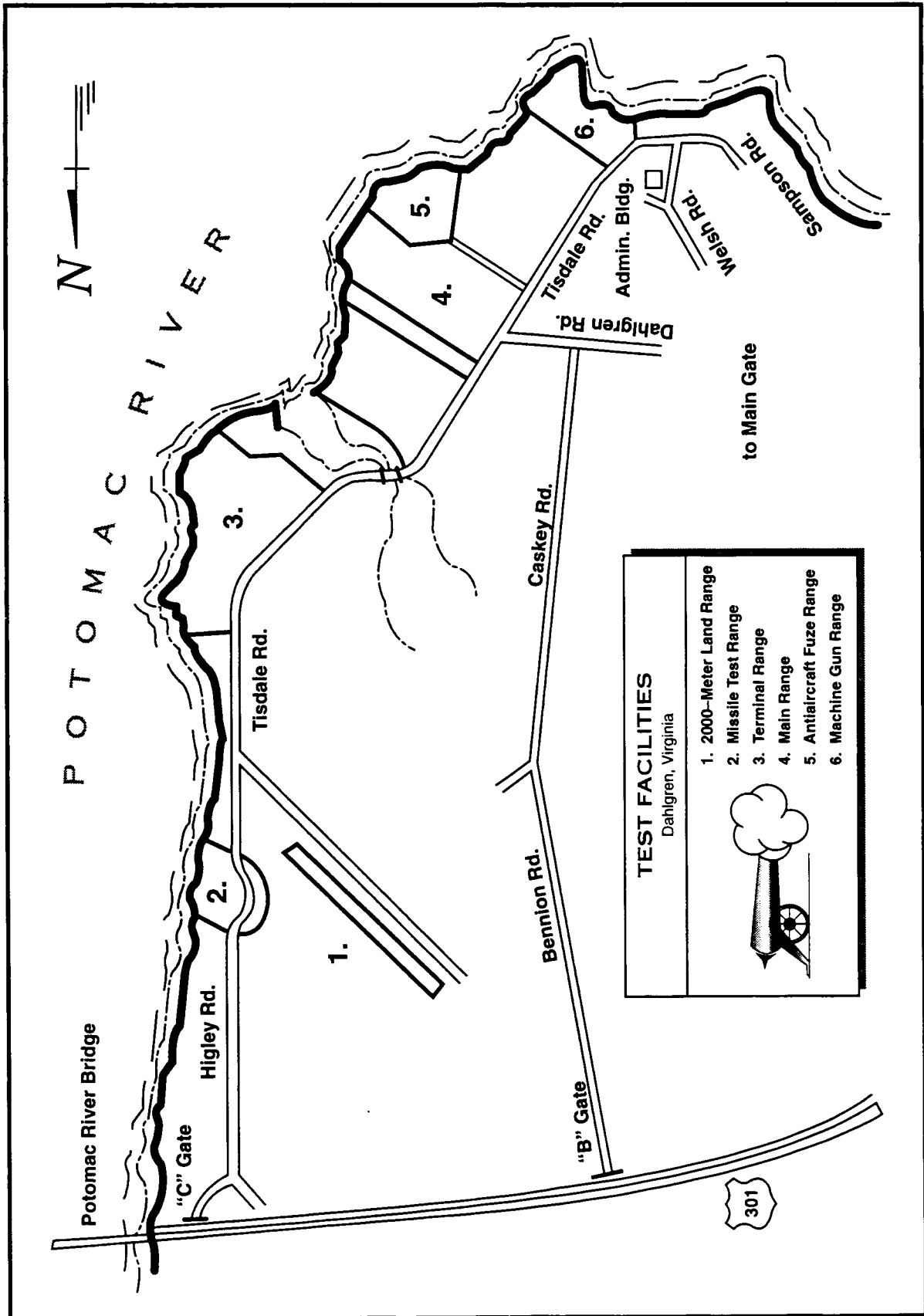
Unauthorized entry into an area is strictly forbidden. Unauthorized personnel entering a test area not only put themselves at risk, but they also endanger other personnel. Personnel entering a closed test area without specific permission from the Firing Director may be subject to disciplinary action, up to and including dismissal.

This publication provides information concerning test ranges and depicts the significance of barricades, red flags, and early warning signs. Photos and maps showing warning signals are included to facilitate awareness. To obtain further information on the test ranges, contact the Ordnance Officer/Range Safety Director at ext. 7460 or Range Control at ext. 8791.

TEST RANGES

- **2000-METER LAND RANGE** – This range is the longest overland range available at NSWCDD, approximately 1500 m (4,900 ft) from the Potomac River. The range is used for testing in which the target must be on land and positioned several hundred meters from the gun. Guns typically used on this range are mounted onto a railroad flatcar and the flatcar is positioned at the desired range from the target.
- **MISSILE TEST RANGE** – It is currently used as an explosive ordnance disposal training range.
- **TERMINAL RANGE** – This range is used for various types of testing, including fuze impact tests, induced flaw testing, rocket exhaust ablative material testing, missile launch systems, etc.
- **MAIN RANGE** – This is the largest single firing range at NSWCDD. Most Main Range activities utilize the Potomac River Test Range as an essential part of the testing. Main Range has three individual firing bridges (Twin Bridge, Major Caliber, and Broadside) controlling guns from 20-mm through 16-in. bore. The gun line is located approximately 1,500 ft from the shoreline.
- **ANTI-AIRCRAFT FUZE RANGE** – This range was established primarily for test firing of explosive-loaded and fuzed projectiles. In order to lessen the fragment hazard to other operations, it is located about 1,200 ft southeast of Main Range. This range is located close enough to the Potomac River to enable the taking of water-surface-burst data at short and long ranges. Malfunction investigations are conducted on this test range.
- **MACHINE GUN RANGE** – This range includes firing bays inside buildings and bays that use the river range. These bays are used for testing of 40-mm and smaller guns and ammunition, penetration testing of light armor materials, and testing of primers of all sizes.

The map on the next page indicates the general location of the major test ranges.



GATES AND BARRICADES

BE ALERT and aware of your surrounding when you are walking, jogging, or driving near the area of a firing range. Warning signals will be displayed when a firing is being conducted. Warning signals comprise of barricades, gates, flags, signs, or combination of all four.

**IF YOU SEE A BARRICADE LOWERED OR
GATE DOWN AT ANY ONE OF TEST RANGES**



**A FIRING PROGRAM IS IN PROGRESS
— DO NOT ENTER —**

Look for any of the following warnings illustrated in the next three photos:



- GATE DOWN – DANGER – EXPLOSIVE TEST IN PROGRESS – DO NOT ENTER (COULD BE REMOTELY OPERATED, HAND-OPERATED, OR A SEMI-PERMANENT STRUCTURE EXTENDING ACROSS A ROAD)



- BARRICADE – DANGER – EXPLOSIVE TEST IN PROGRESS – DO NOT ENTER



- GATE DOWN – DANGER – EXPLOSIVE TEST IN PROGRESS – DO NOT ENTER

If at any time you are unsure of the situation, STOP and call Range Control, ext. 8791, for assistance. If you get caught behind a barricade when it is being lowered, stay where you are. Personnel from Range Control will come and tell you how to proceed.

RED FLAGS

When a red flag is displayed on a firing bridge or at the entrance to an area, the following applies:

- If the flag is at the top of the pole, a firing program is in progress. **STAY OUT OF THIS AREA** – under no circumstances should pedestrians or vehicles proceed beyond the barricade unless permission is received from Range Control, ext. 8791.
- If the flag is at half-mast, the firing program is in preparation or temporarily halted. **DO NOT PROCEED** beyond barricade. Contact Range Control at ext. 8791 for status.
- If the flag is lowered (not visible from anywhere in vicinity), no firing is being conducted.



- RED FLAG AT TOP OF POLE – FIRING PROGRAM IN PROGRESS – DO NOT ENTER (OVERVIEW OF TEST SITE WITH FLAG AT TOP OF POLE)



- RED FLAG AT TOP OF POLE – FIRING PROGRAM IN PROGRESS – DO NOT ENTER



- RED FLAG AT HALF-MAST – FIRING PROGRAM IN PREPARATION OR TEMPORARILY HALTED – DO NOT ENTER

EARLY WARNING SIGNS

To improve safety, early warning signs such as the one below are located in various locations to allow everyone sufficient time to turn around before approaching barricades.

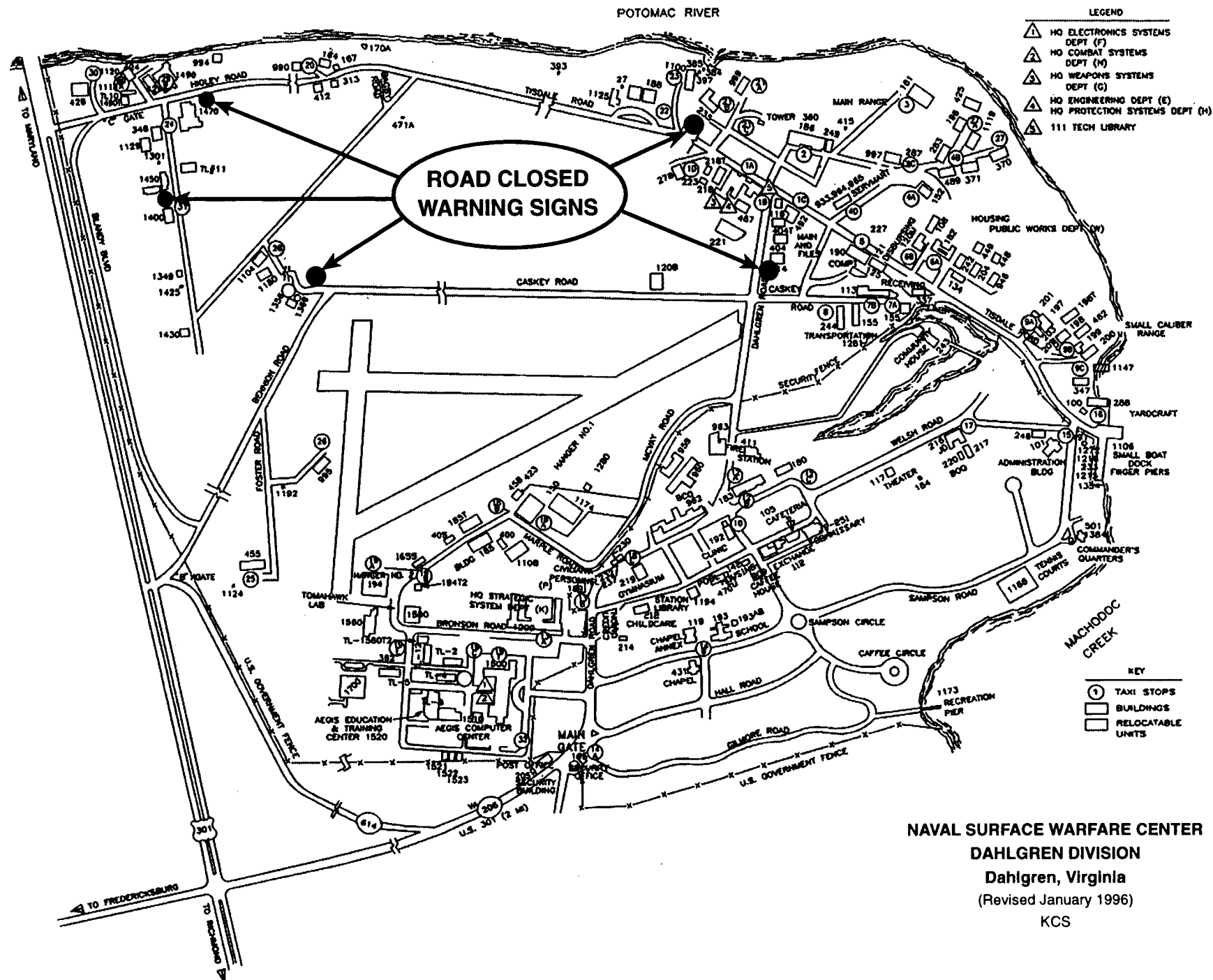


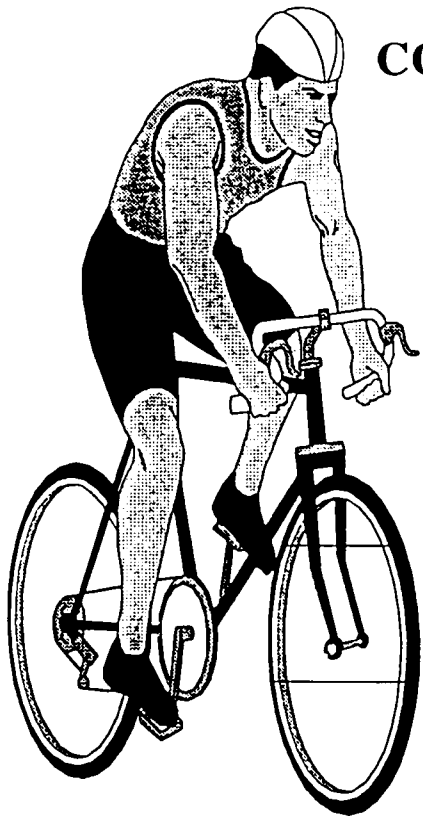
IF YOU SEE LIGHT FLASHING ON A WARNING SIGN



ROAD CLOSED, TURN AROUND

The map on the next page shows the locations of early warning signs.





CONSEQUENCES

- DISCIPLINARY ACTION
- INJURY
- DEATH



DANGER
EXPLOSIVE TEST IN PROGRESS
 — DO NOT ENTER —

Some excuses received from violators for going around the barricades are:

- I'm late for a very important meeting.
- I left my briefcase in my office.
- I didn't see the barricade.
- Nobody told me I couldn't go around the barricade.
- I didn't hear any guns going off.
- I saw someone else go around the barricade.

Regardless of what your situation is – **DO NOT** go around any barricade unless you receive permission from Range Control (ext. 8791). Violators will be reported and disciplinary action taken.

Our primary concern is the safety of all personnel. Barricades, flags, and early warning signs may be inconvenient, but they are not done arbitrarily. They are there to save you from injury or death. If you enter those areas, you are endangering yourself and others. Therefore, know these warning signs and obey them for the safety of all personnel.

**KNOW THE SAFETY LAWS, BUT DON'T
LEARN THEM BY ACCIDENT**



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